Fig. 1

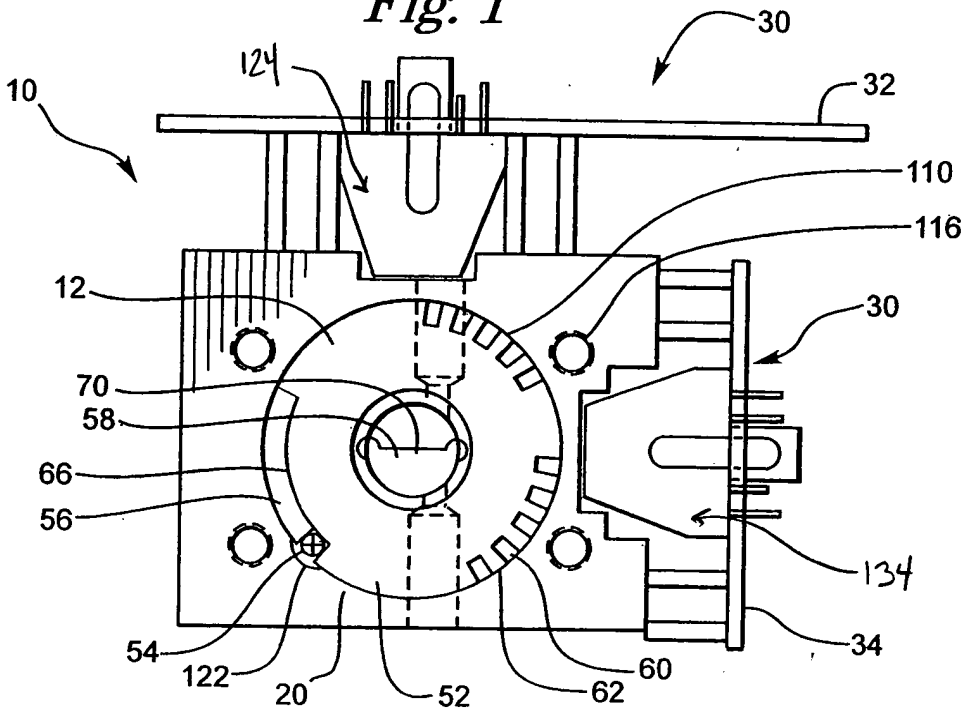

124
30
10
32
110
116
12
30
70
58
66
56
134
54
122
20
52
62
60
34

Fig. 2

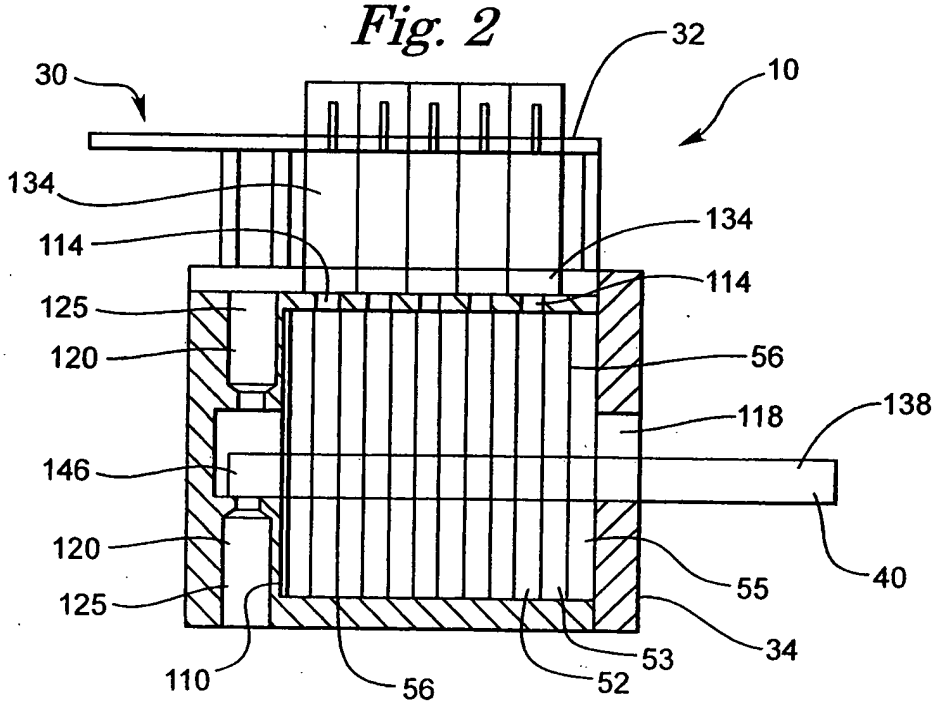

32
30
10
134
114
134
114
125
120
56
118
138
146
120
55
40
125
34
110
56
52
53

Fig. 3

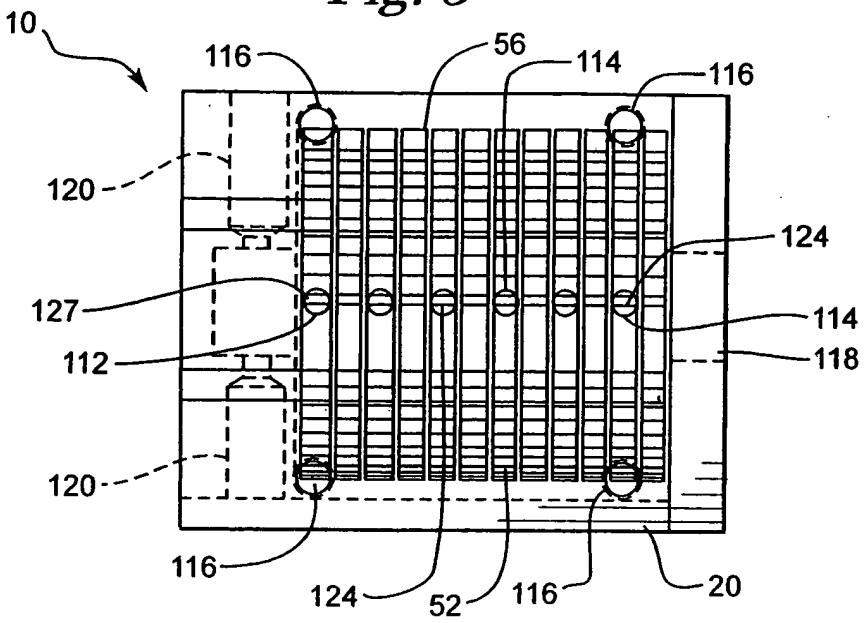

10
116
56
114
116
120
124
127
114
112
118
120
116
124
52
116
20

Fig. 4

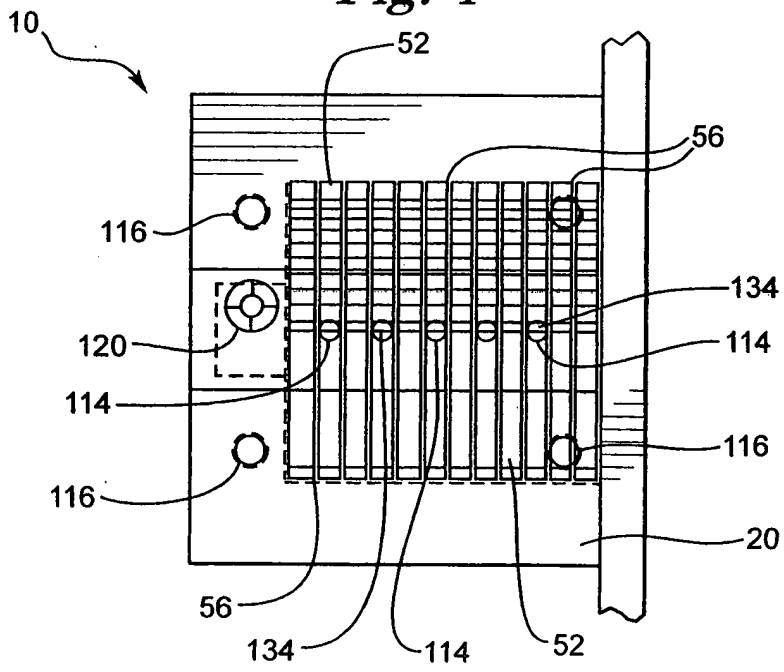

10
52
56
116
134
120
114
114
116
116
20
56
134
114
52

Fig. 5

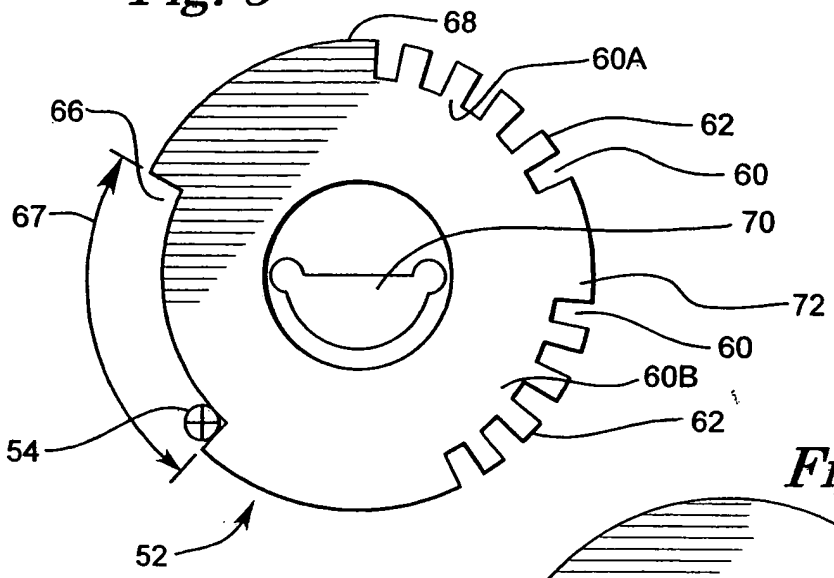


Fig. 6

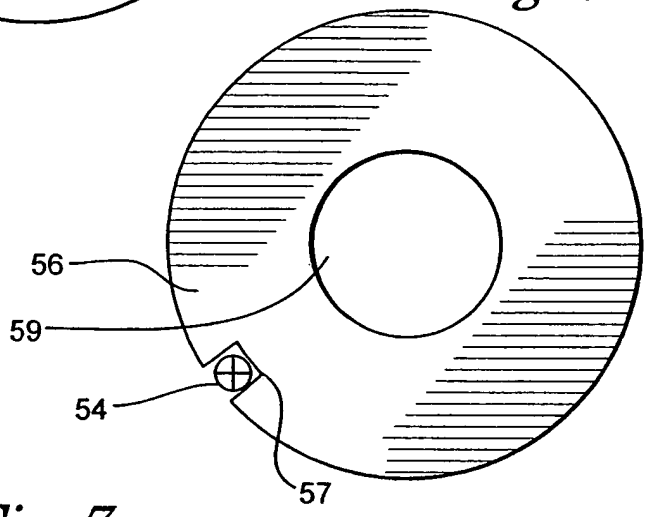


Fig. 7

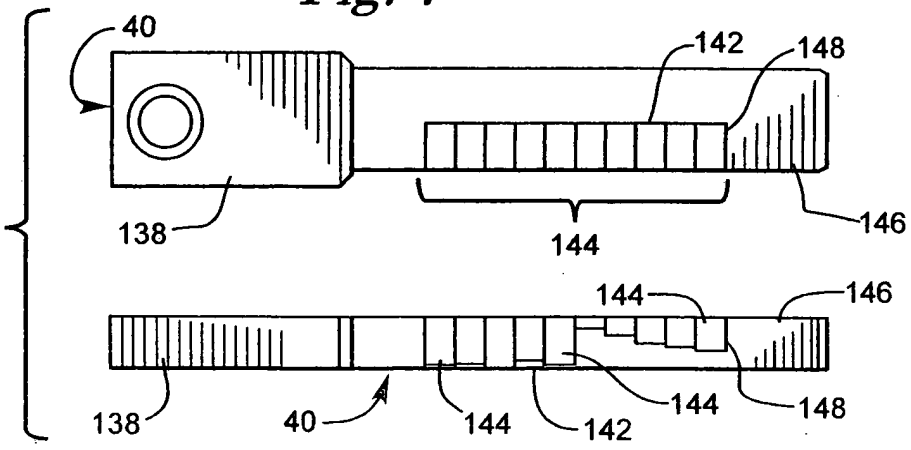


Fig. 8

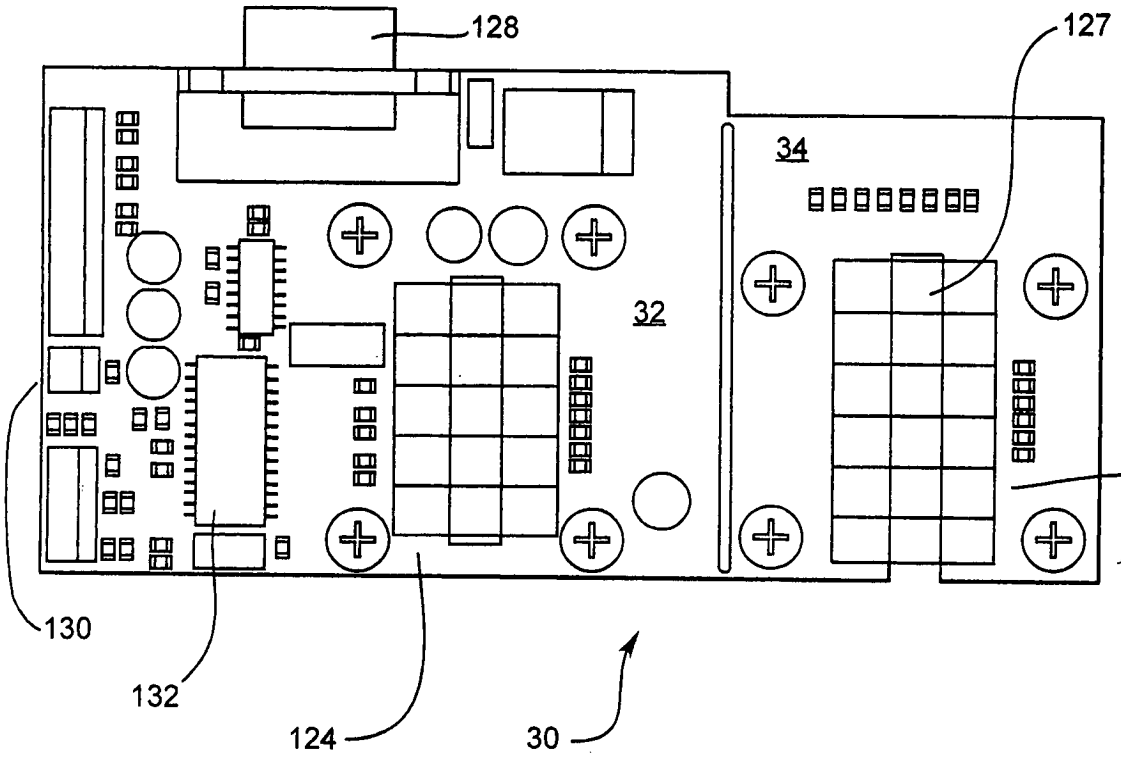


Fig. 12A

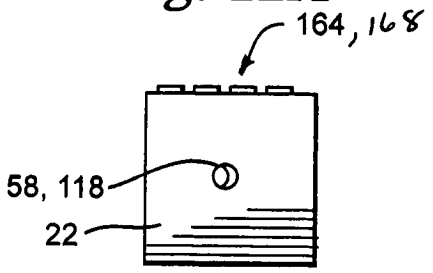


Fig. 12B

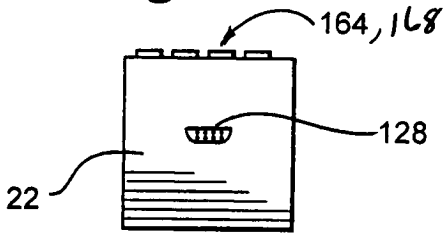


Fig. 9A

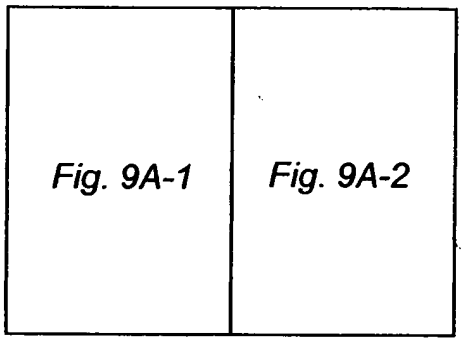


Fig. 9B

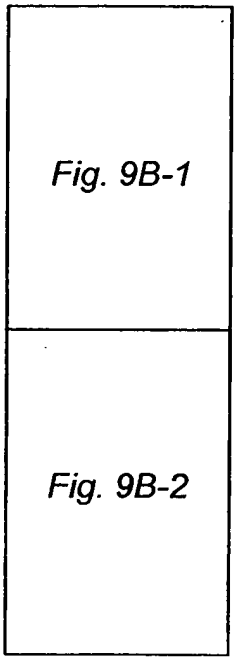


Fig. 9A-1

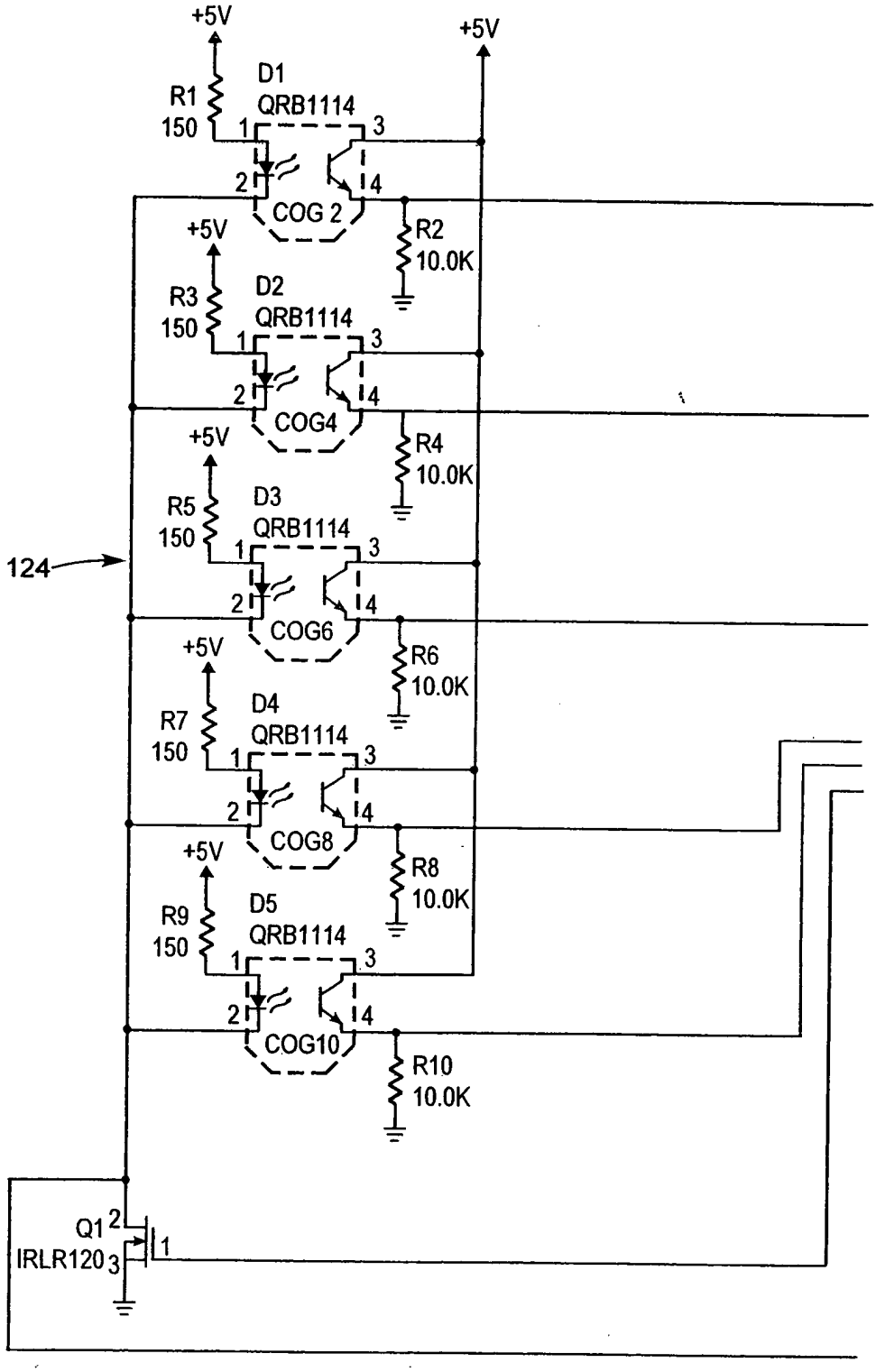

+5V
+5V
R1
150
D1
QRB1114
1
2
3
4
COG 2
R2
10.0K
+5V
R3
150
D2
QRB1114
COG4
R4
10.0K
+5V
R5
150
D3
QRB1114
124
COG6
R6
10.0K
+5V
R7
150
D4
QRB1114
COG8
R8
10.0K
+5V
R9
150
D5
QRB1114
COG10
R10
10.0K
Q1
IRLR120

Fig. 9A-2

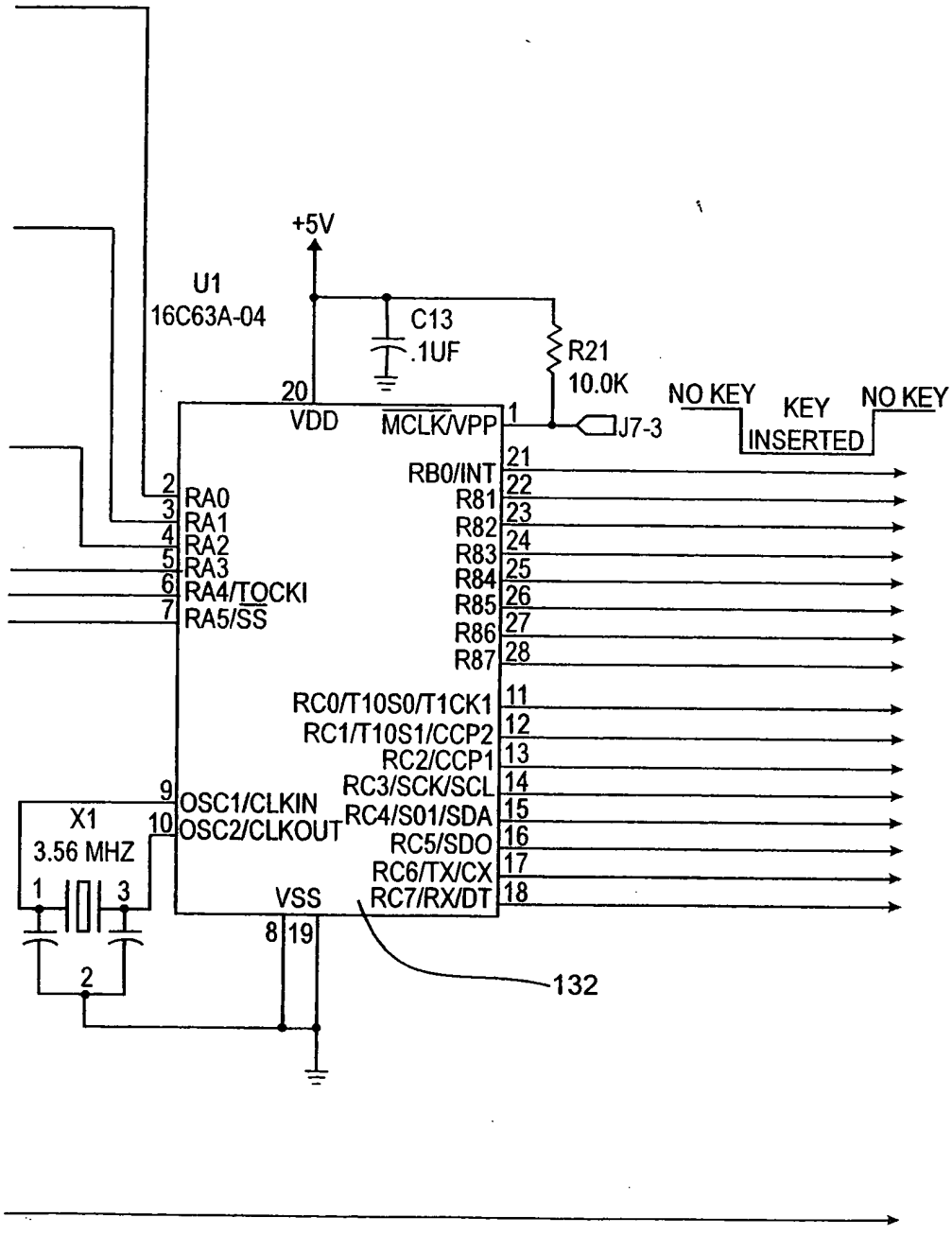
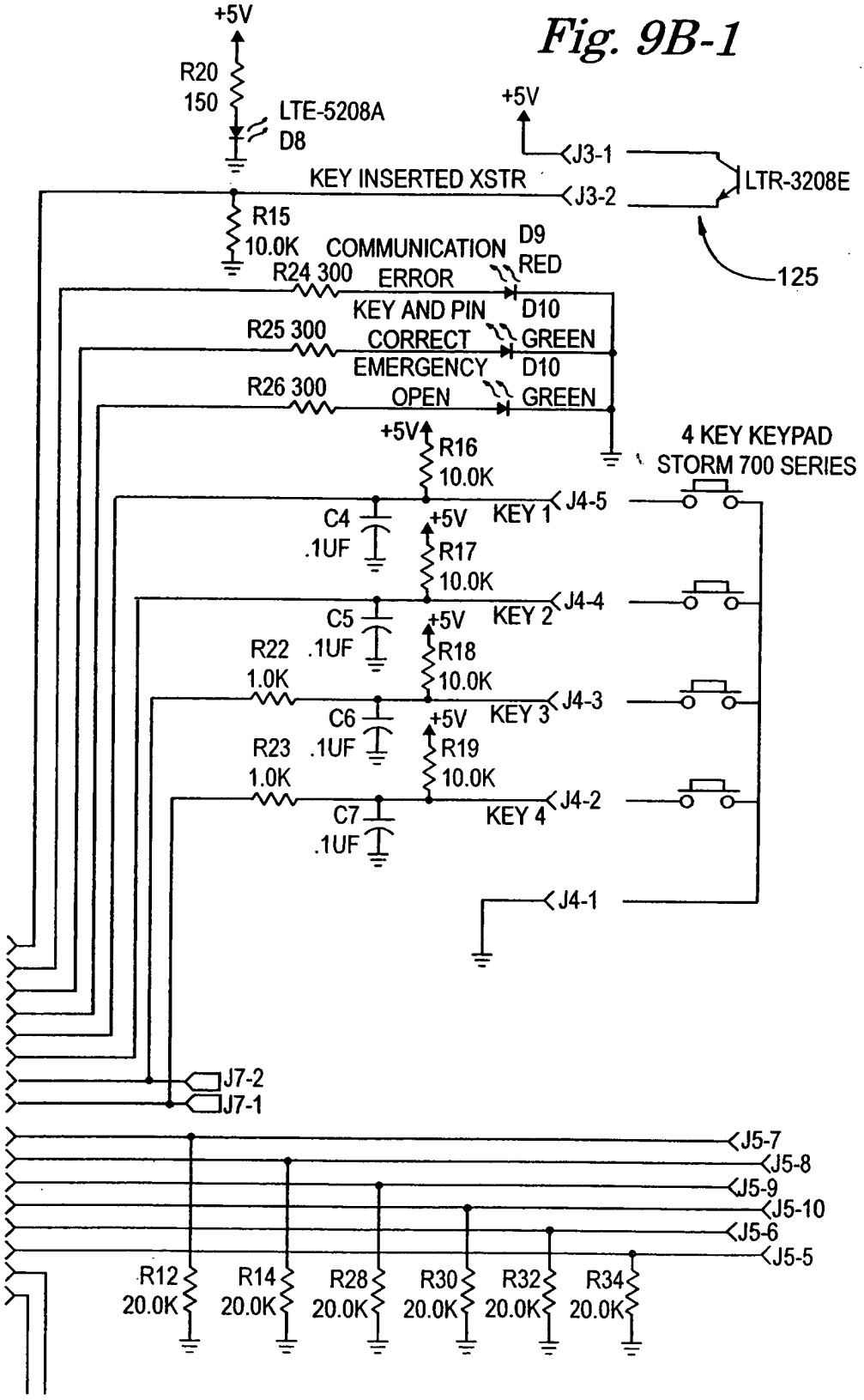

+5V
U1
16C63A-04
C13
.1UF
R21
10.0K
NO KEY
KEY
INSERTED
NO KEY
20
VDD
MCLK/VPP
1
J7-3
RB0/INT
21
R81
22
R82
23
R83
24
R84
25
R85
26
R86
27
R87
28
2
RA0
3
RA1
4
RA2
5
RA3
6
RA4/TOCKI
7
RA5/SS
RC0/T10S0/T1CK1
11
RC1/T10S1/CCP2
12
RC2/CCP1
13
RC3/SCK/SCL
14
RC4/S01/SDA
15
RC5/SDO
16
RC6/TX/CX
17
RC7/RX/DT
18
9
OSC1/CLKIN
10
OSC2/CLKOUT
X1
3.56 MHZ
1
3
2
VSS
8
19
132

Fig. 9B-1


+5V
R20
150
LTE-5208A
D8
+5V
J3-1
KEY INSERTED XSTR
J3-2
LTR-3208E
R15
10.0K
COMMUNICATION
ERROR
D9
RED
R24 300
KEY AND PIN
CORRECT
D10
GREEN
R25 300
EMERGENCY
OPEN
D10
GREEN
R26 300
125
+5V
R16
10.0K
4 KEY KEYPAD
STORM 700 SERIES
C4
.1UF
+5V
KEY 1
J4-5
R17
10.0K
C5
.1UF
+5V
KEY 2
J4-4
R22
1.0K
R18
10.0K
C6
.1UF
+5V
KEY 3
J4-3
R23
1.0K
R19
10.0K
C7
.1UF
KEY 4
J4-2
J4-1
J7-2
J7-1
J5-7
J5-8
J5-9
J5-10
J5-6
J5-5
R12
20.0K
R14
20.0K
R28
20.0K
R30
20.0K
R32
20.0K
R34
20.0K

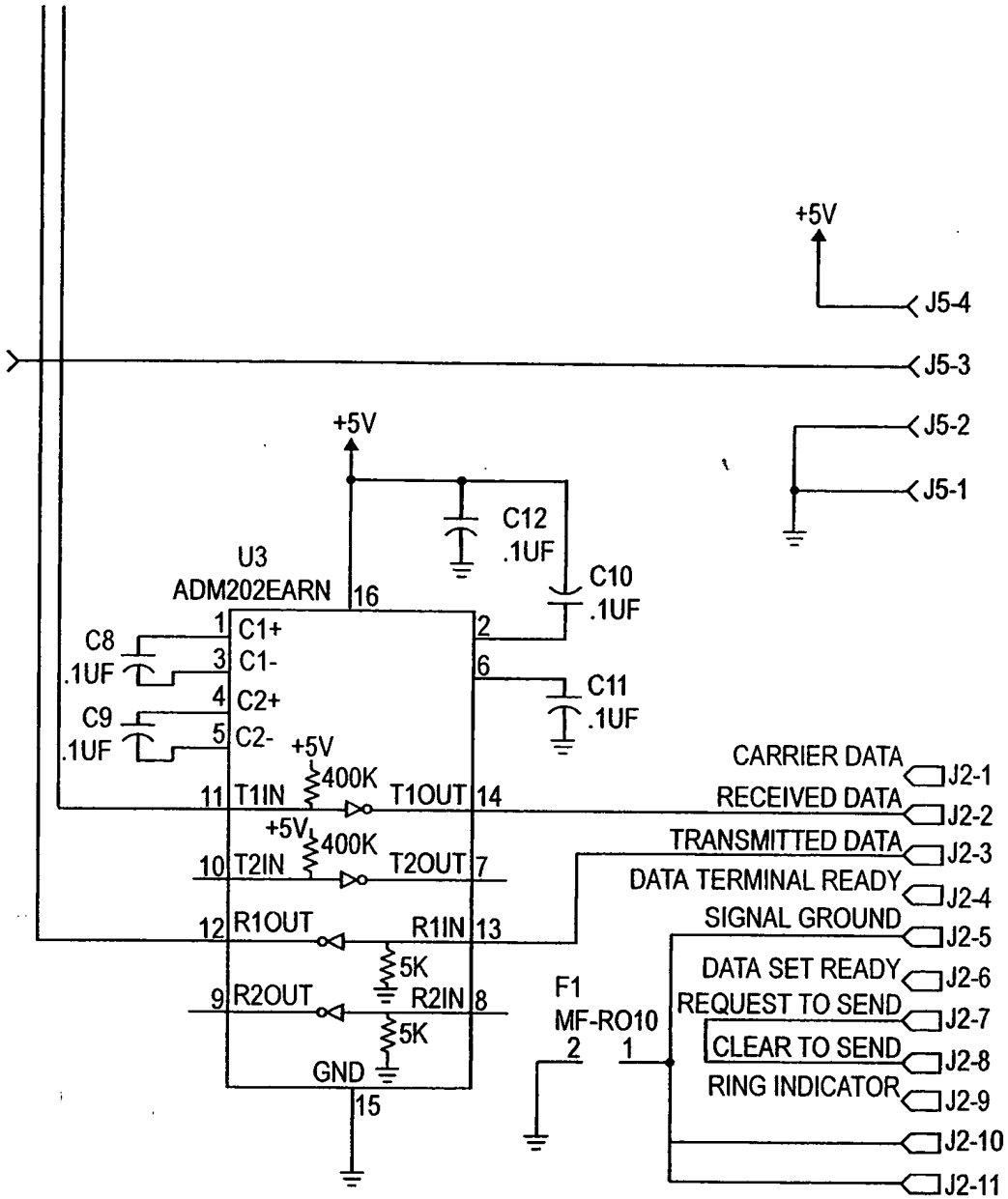
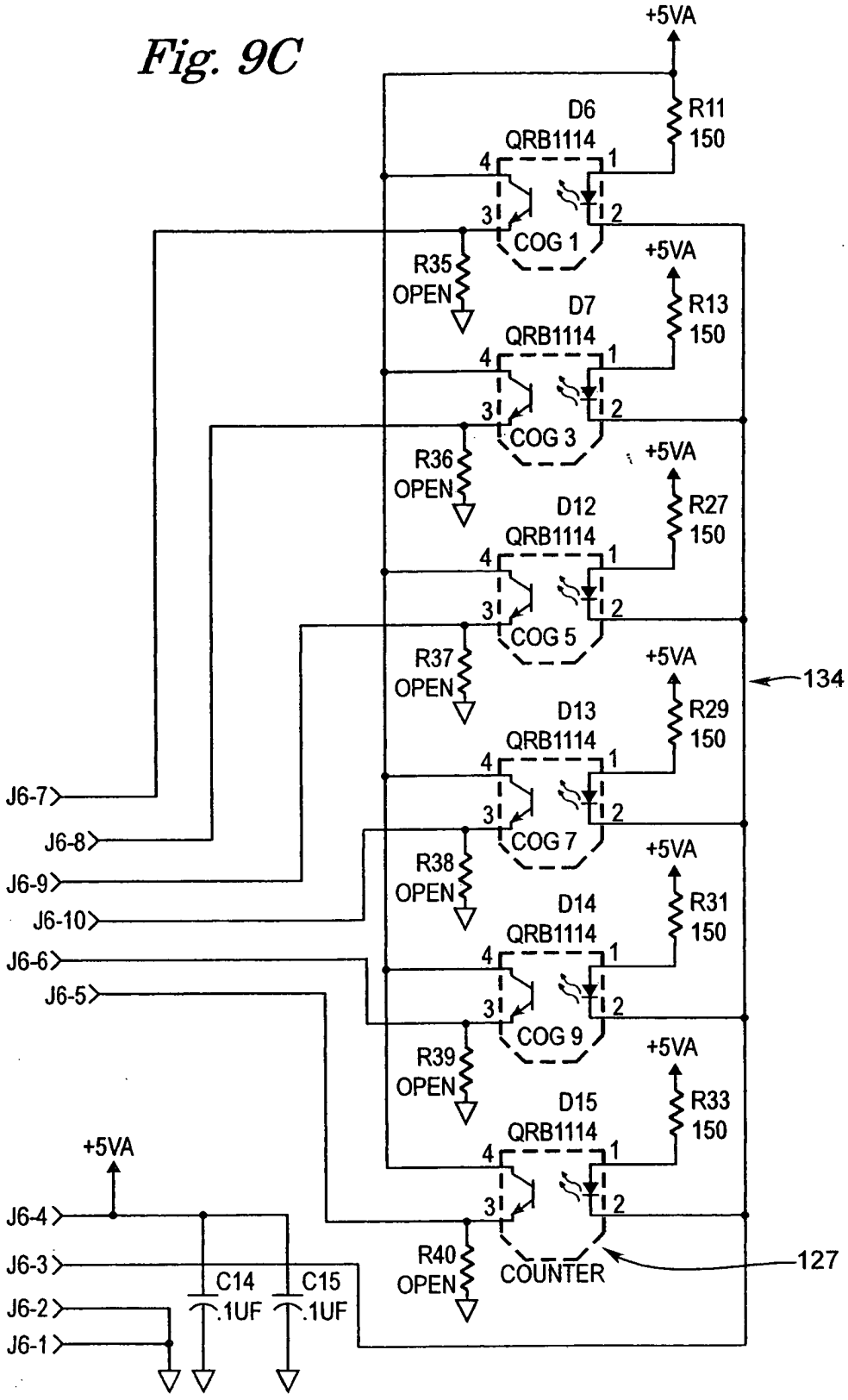

+5V
J5-4
J5-3
J5-2
J5-1
+5V
C12
.1UF
C10
.1UF
U3
ADM202EARN
16
1
C1+
2
C8
.1UF
3
C1-
6
C11
.1UF
4
C2+
C9
.1UF
5
C2-
+5V
400K
11
T1IN
T1OUT
14
CARRIER DATA
J2-1
RECEIVED DATA
J2-2
+5V
400K
TRANSMITTED DATA
J2-3
10
T2IN
T2OUT
7
DATA TERMINAL READY
J2-4
SIGNAL GROUND
J2-5
12
R1OUT
R1IN
13
5K
DATA SET READY
J2-6
F1
MF-RO10
2
1
9
R2OUT
R2IN
8
REQUEST TO SEND
J2-7
5K
CLEAR TO SEND
J2-8
GND
RING INDICATOR
J2-9
15
J2-10
J2-11

Fig. 9B-2

Fig. 9C


+5VA
D6
QRB1114
R11
150
COG 1
R35
OPEN
D7
QRB1114
R13
150
COG 3
R36
OPEN
D12
QRB1114
R27
150
COG 5
R37
OPEN
D13
QRB1114
R29
150
COG 7
R38
OPEN
D14
QRB1114
R31
150
COG 9
R39
OPEN
D15
QRB1114
R33
150
R40
OPEN
COUNTER
134
127
J6-7
J6-8
J6-9
J6-10
J6-6
J6-5
J6-4
J6-3
J6-2
J6-1
C14
.1UF
C15
.1UF

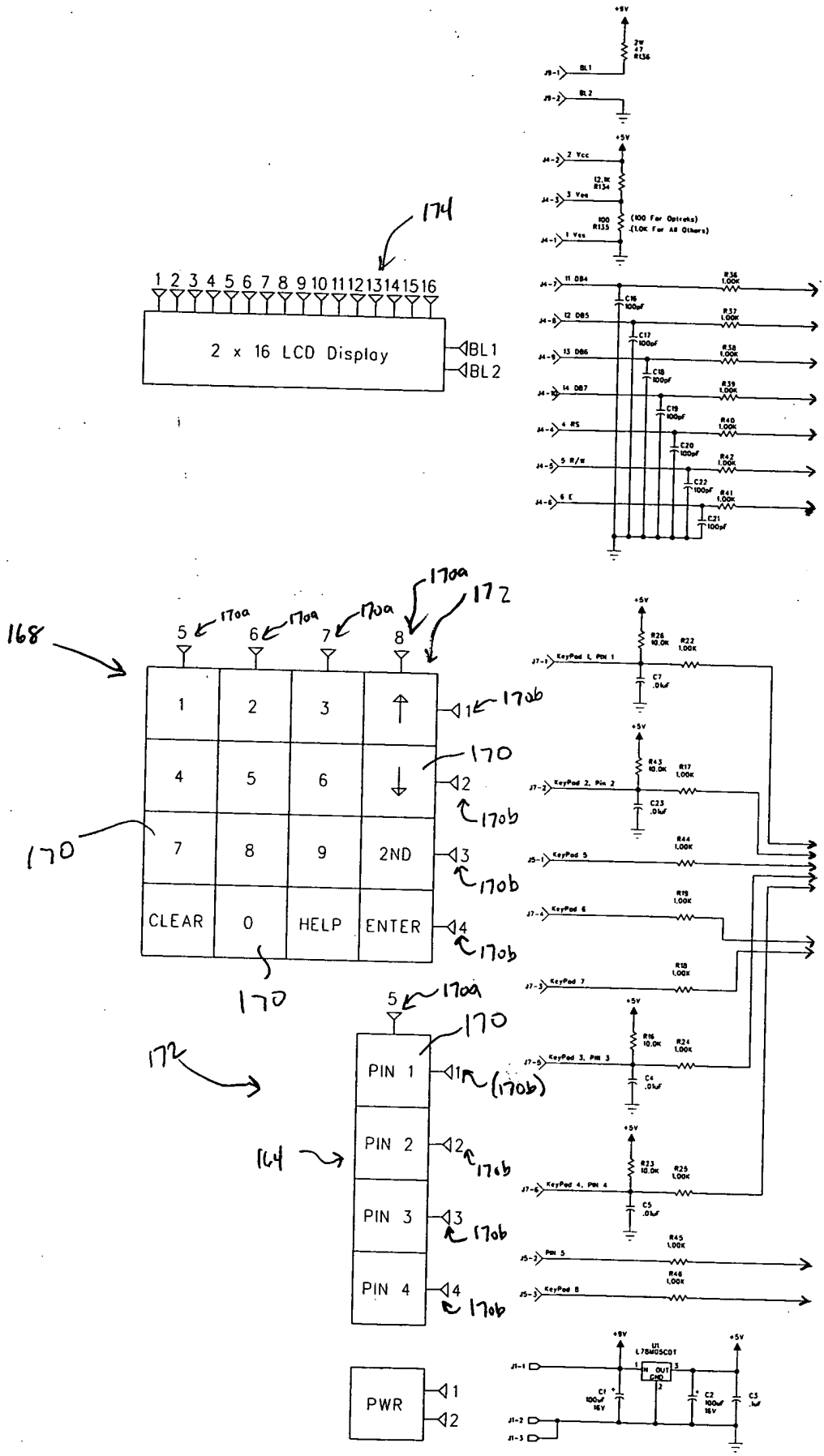

174
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
2 x 16 LCD Display
BL1
BL2
168
170a
172
170
170b
5 6 7 8
1 2 3
4 5 6
7 8 9 2ND
CLEAR 0 HELP ENTER
PIN 1
PIN 2
PIN 3
PIN 4
164
PWR
+9V
+5V
R136
R134
R135
(100 For Optreks)
(10K For All Others)
R36
R37
R38
R39
R40
R42
R41
C16
C17
C18
C19
C20
C22
C21
R26
R22
R43
R17
R44
R19
R18
R16
R24
R23
R25
R45
R46
C7
C23
C4
C5
U1
L78M05CDT
C1
C2
C3

Fig. 9D

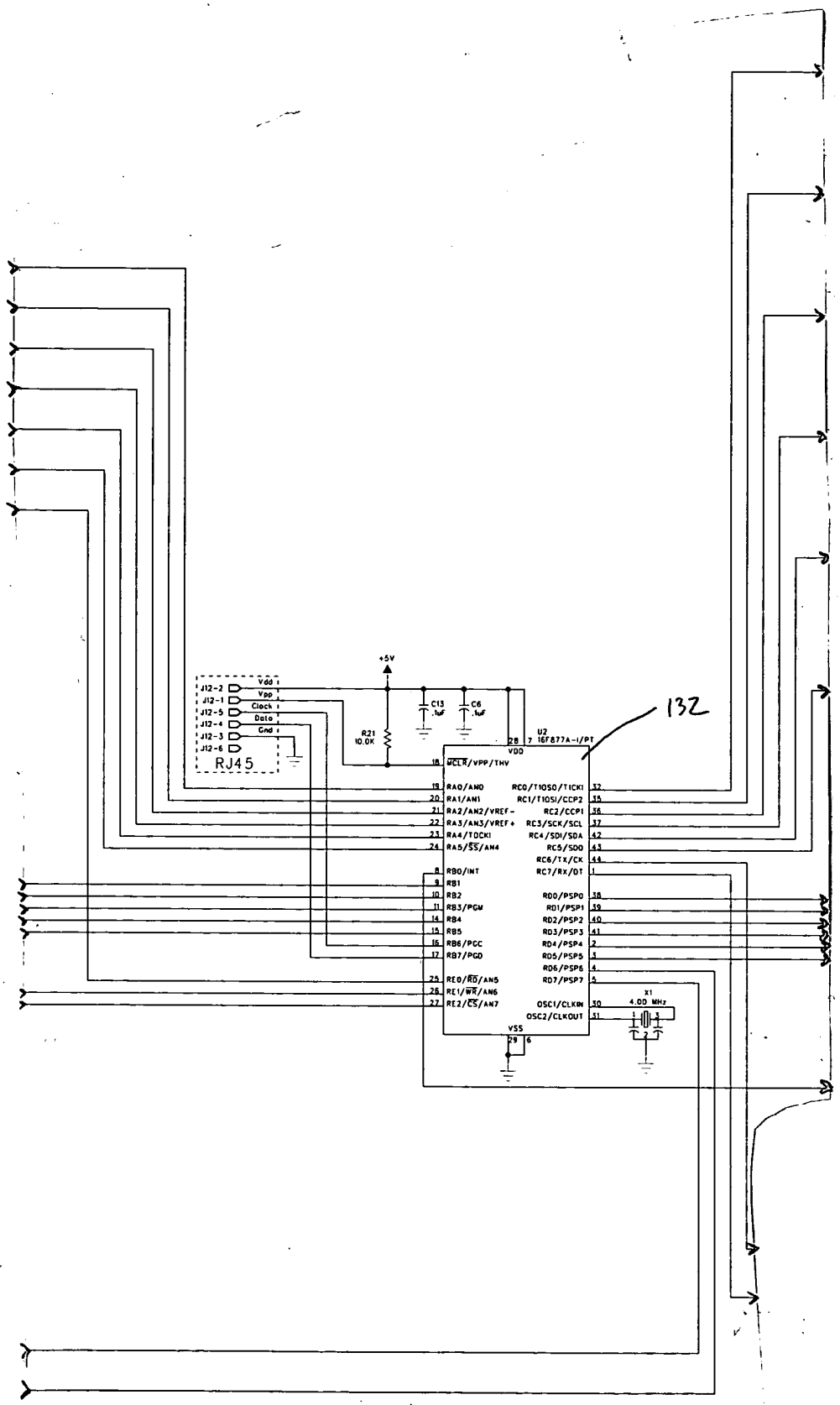

132
+5V
J12-2
J12-1
J12-5
J12-4
J12-3
J12-6
Vdd
Vpp
Clock
Data
Gnd
RJ45
R21
10.0K
C13
.1uF
C6
.1uF
U2
16F877A-I/PT
VDD
VSS
MCLR/VPP/THV
RA0/AN0
RA1/AN1
RA2/AN2/VREF-
RA3/AN3/VREF+
RA4/T0CKI
RA5/SS/AN4
RB0/INT
RB1
RB2
RB3/PGM
RB4
RB5
RB6/PGC
RB7/PGD
RE0/RD/AN5
RE1/WR/AN6
RE2/CS/AN7
RC0/T1OSO/T1CKI
RC1/T1OSI/CCP2
RC2/CCP1
RC3/SCK/SCL
RC4/SDI/SDA
RC5/SDO
RC6/TX/CK
RC7/RX/DT
RD0/PSP0
RD1/PSP1
RD2/PSP2
RD3/PSP3
RD4/PSP4
RD5/PSP5
RD6/PSP6
RD7/PSP7
OSC1/CLKIN
OSC2/CLKOUT
X1
4.00 MHz

Fig. 9E

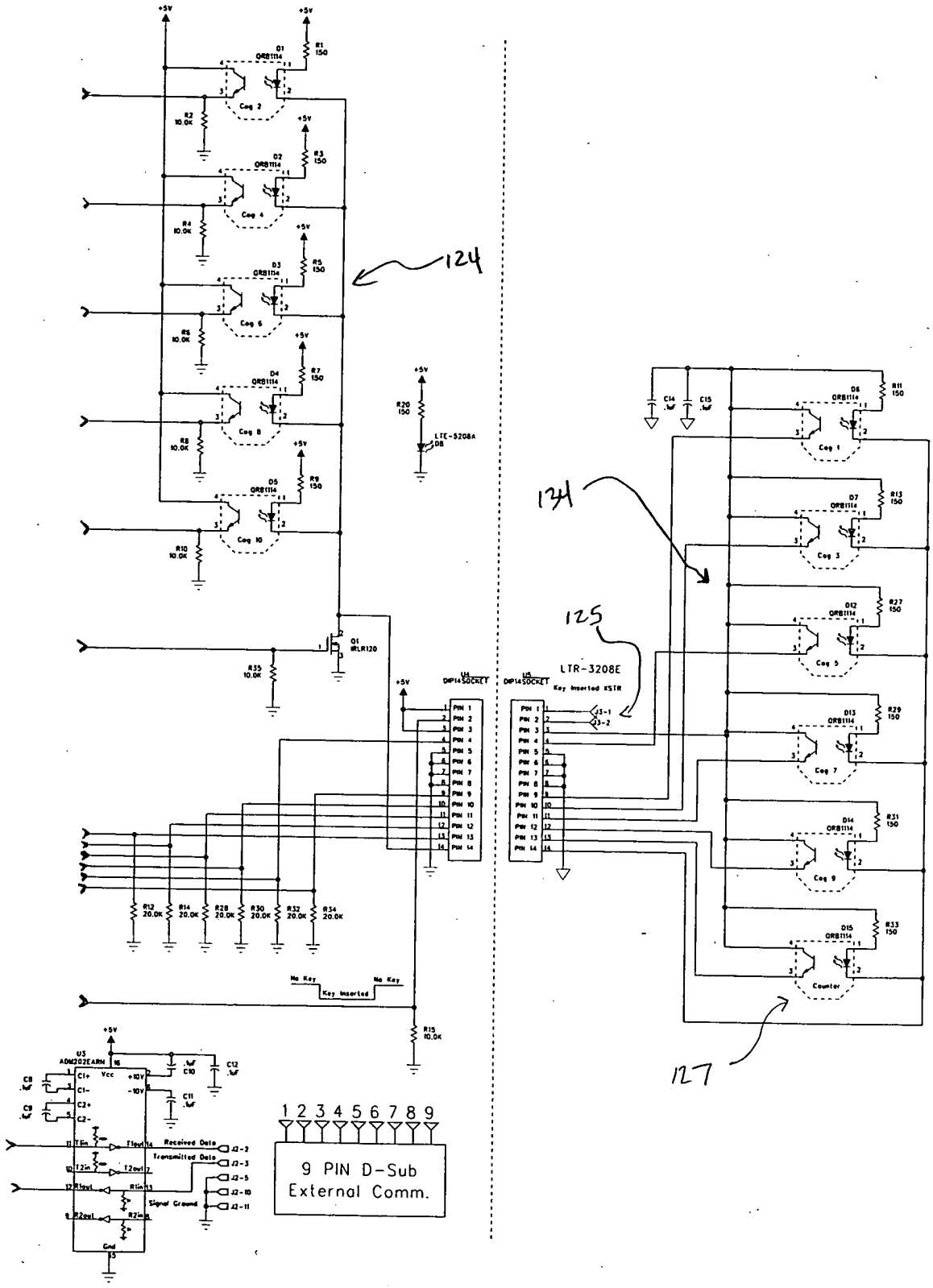

124
125
LTR-3208E
Key Inserted
No Key
9 PIN D-Sub
External Comm.
1 2 3 4 5 6 7 8 9
127

Fig. 9F

Fig. 10

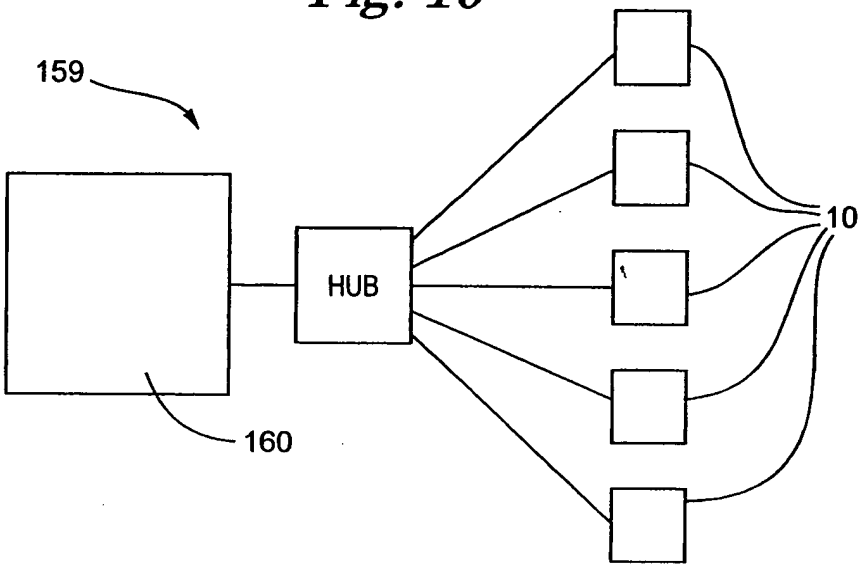


Fig. 11

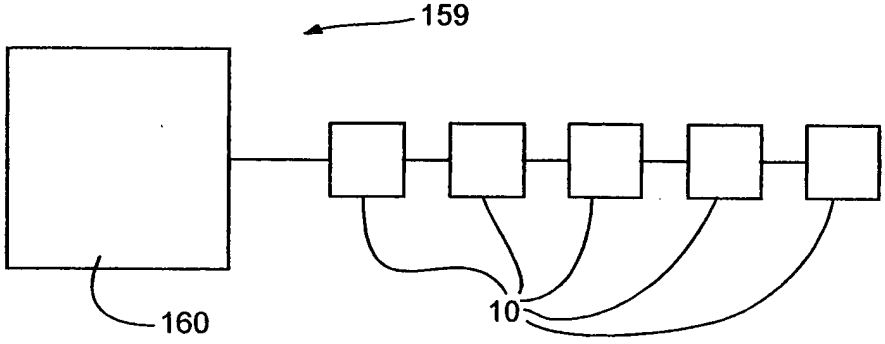


Fig. 13A

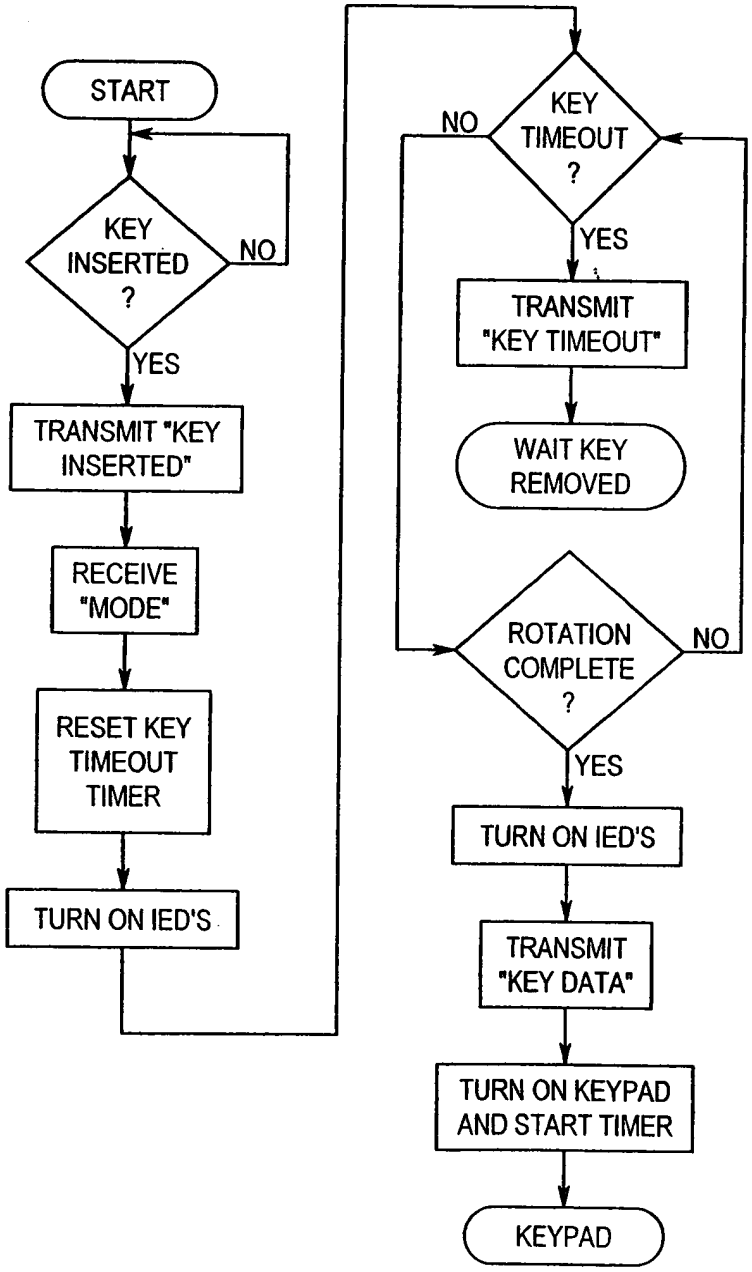

START
KEY INSERTED ?
NO
YES
TRANSMIT "KEY INSERTED"
RECEIVE "MODE"
RESET KEY TIMEOUT TIMER
TURN ON IED'S
KEY TIMEOUT ?
NO
YES
TRANSMIT "KEY TIMEOUT"
WAIT KEY REMOVED
ROTATION COMPLETE ?
NO
YES
TURN ON IED'S
TRANSMIT "KEY DATA"
TURN ON KEYPAD AND START TIMER
KEYPAD

Fig. 13B

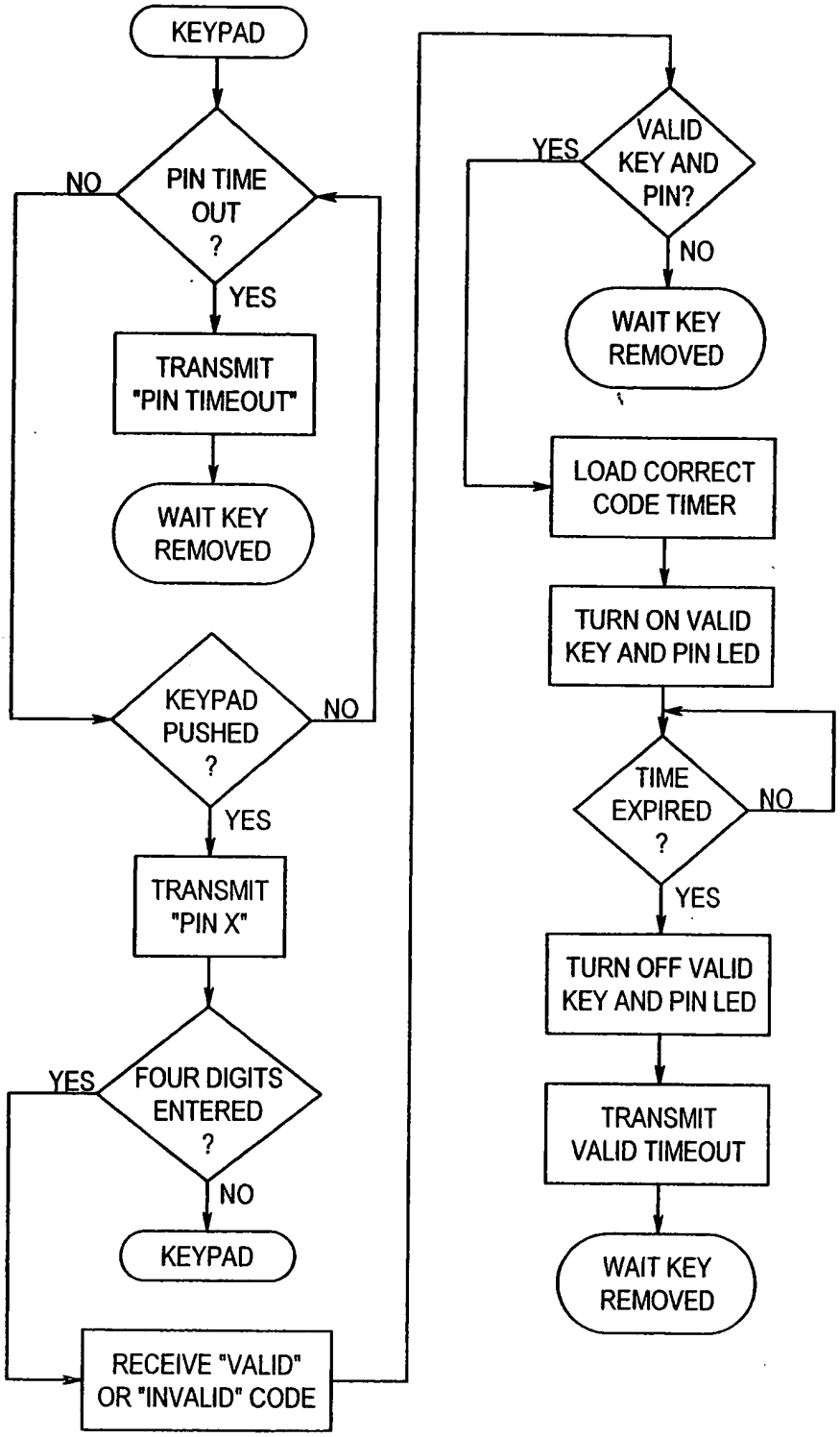
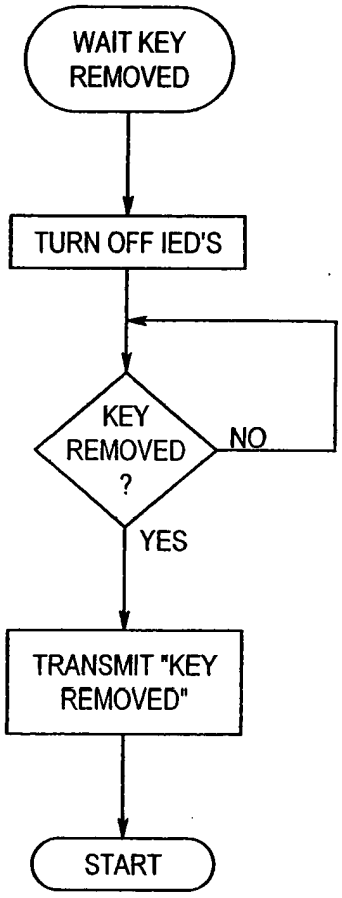

KEYPAD
PIN TIME OUT ?
NO
YES
TRANSMIT "PIN TIMEOUT"
WAIT KEY REMOVED
KEYPAD PUSHED ?
NO
YES
TRANSMIT "PIN X"
FOUR DIGITS ENTERED ?
YES
NO
KEYPAD
RECEIVE "VALID" OR "INVALID" CODE
VALID KEY AND PIN?
YES
NO
WAIT KEY REMOVED
LOAD CORRECT CODE TIMER
TURN ON VALID KEY AND PIN LED
TIME EXPIRED ?
NO
YES
TURN OFF VALID KEY AND PIN LED
TRANSMIT VALID TIMEOUT
WAIT KEY REMOVED

Fig. 13C


WAIT KEY REMOVED
TURN OFF IED'S
KEY REMOVED ?
NO
YES
TRANSMIT "KEY REMOVED"
START

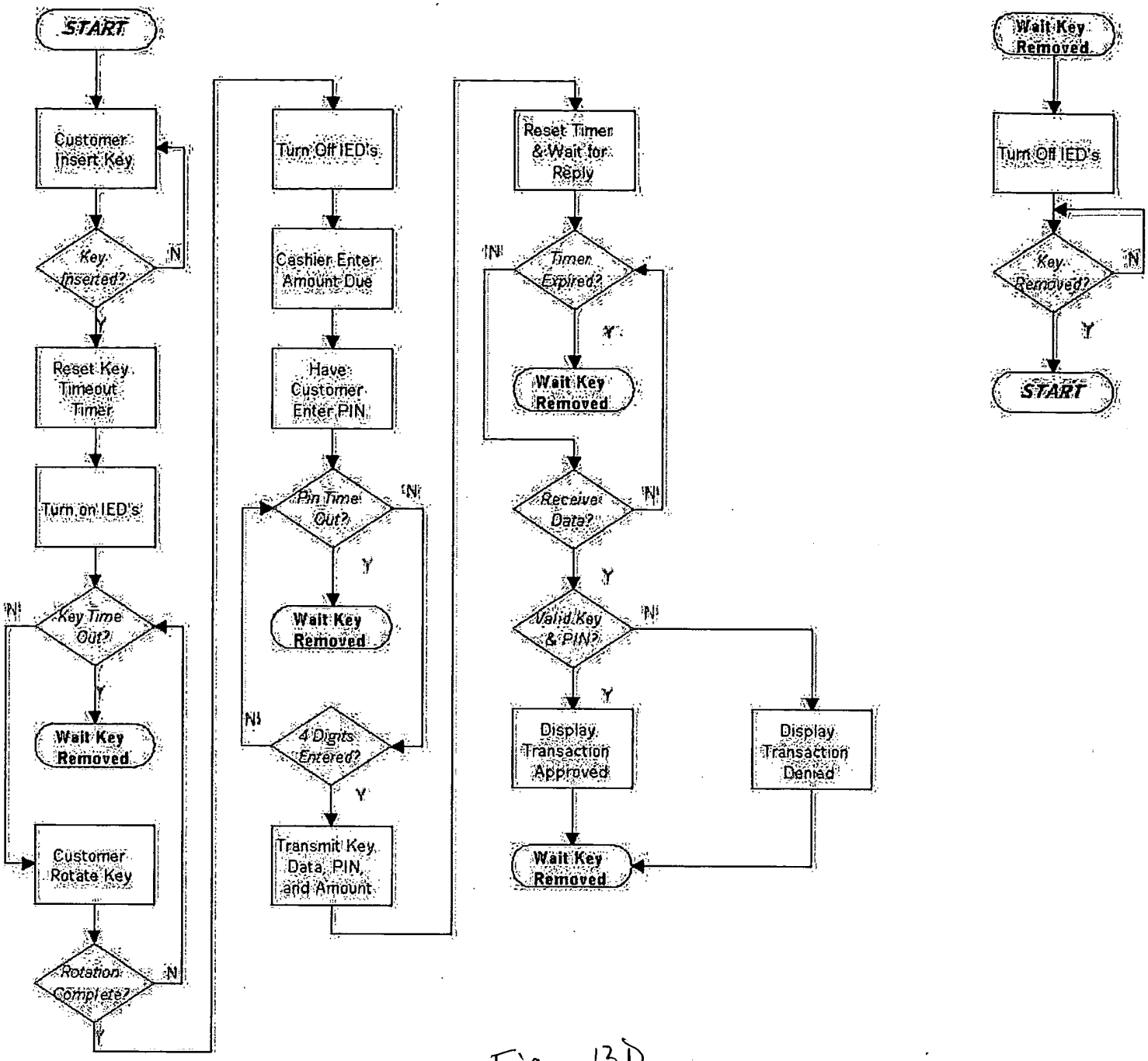
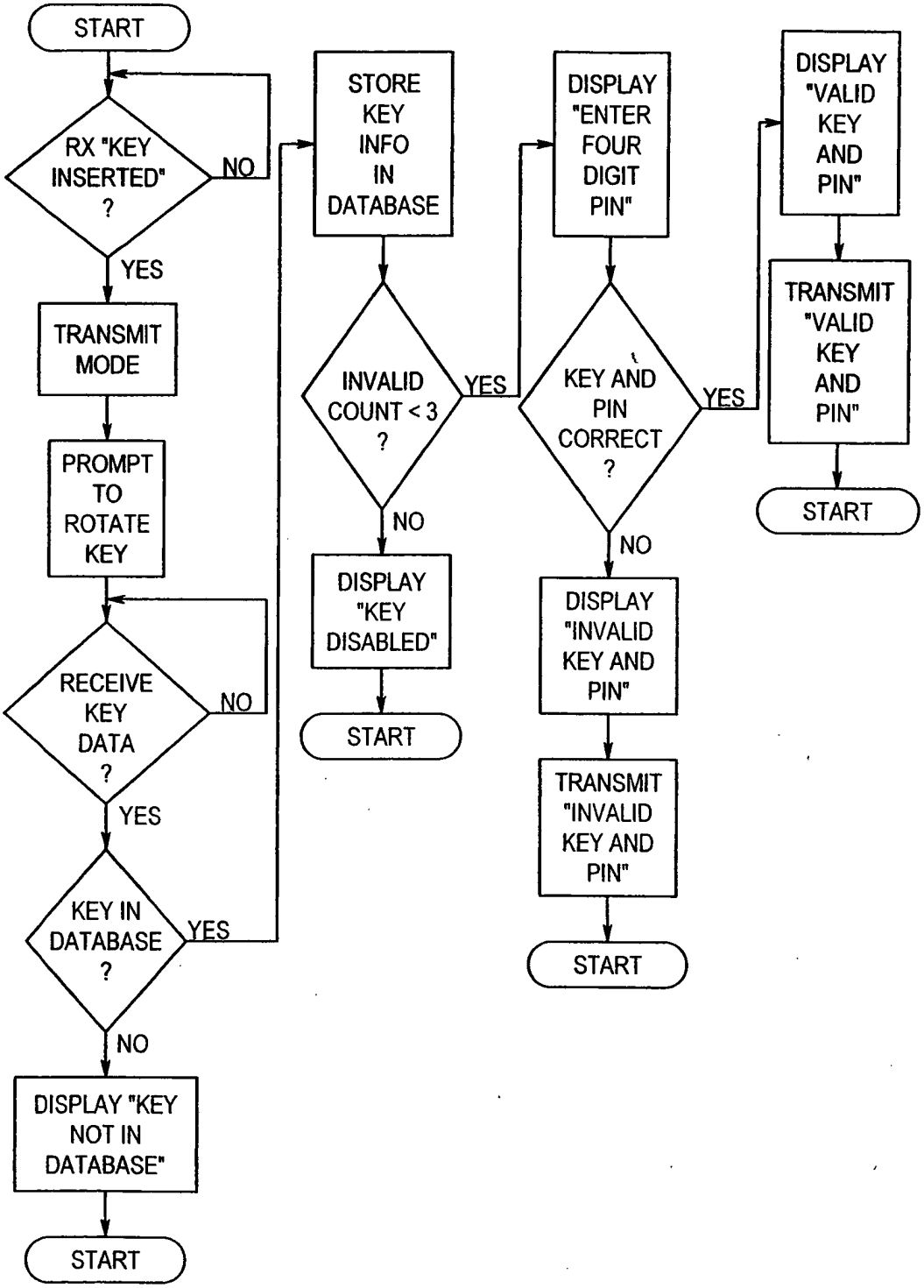

START
Customer Insert Key
Key Inserted?
N
Y
Reset Key Timeout Timer
Turn on IED's
Key Time Out?
N
Y
Wait Key Removed
Customer Rotate Key
Rotation Complete?
N
Y
Turn Off IED's
Cashier Enter Amount Due
Have Customer Enter PIN
Pin Time Out?
N
Y
Wait Key Removed
4 Digits Entered?
N
Y
Transmit Key Data, PIN, and Amount
Reset Timer & Wait for Reply
Timer Expired?
N
Y
Wait Key Removed
Receive Data?
N
Y
Valid Key & PIN?
N
Y
Display Transaction Approved
Display Transaction Denied
Wait Key Removed
Wait Key Removed
Turn Off IED's
Key Removed?
N
Y
START

Fig. 13D

Fig. 14


START
RX "KEY INSERTED" ?
NO
YES
TRANSMIT MODE
PROMPT TO ROTATE KEY
RECEIVE KEY DATA ?
NO
YES
KEY IN DATABASE ?
YES
NO
DISPLAY "KEY NOT IN DATABASE"
START
STORE KEY INFO IN DATABASE
INVALID COUNT < 3 ?
YES
NO
DISPLAY "KEY DISABLED"
START
DISPLAY "ENTER FOUR DIGIT PIN"
KEY AND PIN CORRECT ?
YES
NO
DISPLAY "INVALID KEY AND PIN"
TRANSMIT "INVALID KEY AND PIN"
START
DISPLAY "VALID KEY AND PIN"
TRANSMIT "VALID KEY AND PIN"
START

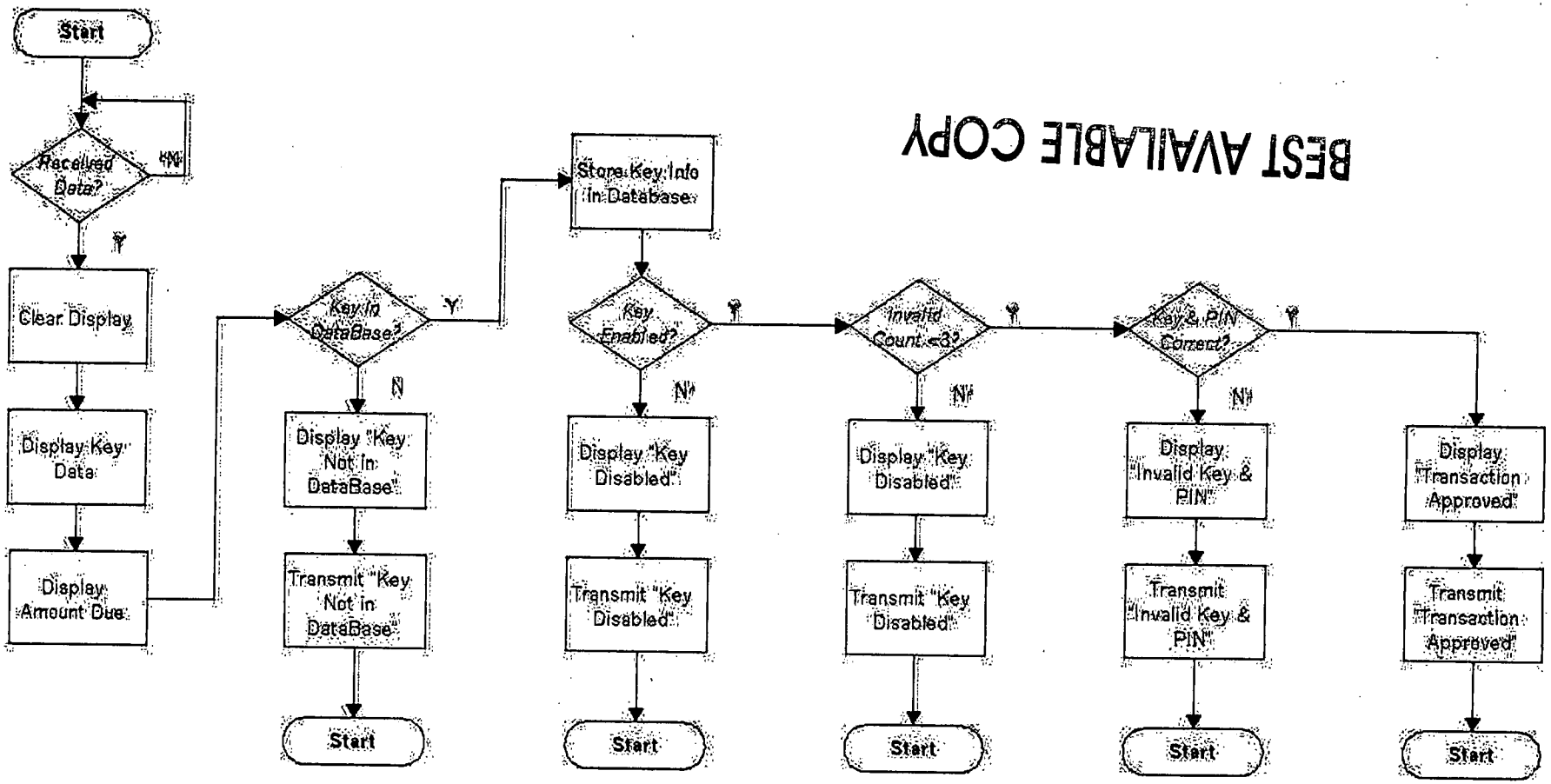


Fig. 15